

SOME NEW SPECIES AND VARIETIES IN THE GENUS HAWORTHIA. III.

(With Plate IV.)

By G. G. SMITH.

Haworthia Beanii, G. G. Smith. (Liliaceae-Aloineae) Sect. Trifariae.

Caulis foliatus longus 8 cm., latus una cum foliis 65 mm.

Folia tortuose trifaria, imbricata, longa 42 mm., lata $18\frac{1}{2}$ mm., longe recurvata; *supra* concava, parte $1\frac{1}{3}$ superiore minute scabrosa arenosaque.

Pedunculus simplex, longus una cum racemo 27 cm., diam. vix 1 mm.; *racemus* longus 9—10 cm., floribus gemmisque circiter 14 ornatus; *pedicelli* longi $4\frac{1}{2}$ —5 mm., diam. $\frac{1}{2}$ mm. claro-fusci; *bracteae steriles* 3, longae $5\frac{1}{2}$ mm.; *bracteae fertiles* longae $2\frac{1}{2}$ mm.; *perianthium* opaco-album, longum 15—16 mm.; *ovarium* longum $2\frac{1}{2}$ mm., diam. vix $1\frac{1}{4}$ mm.; *stylus* longus $1\frac{1}{2}$ mm.

Leafy stem erect, 8 cm. long, 65 mm. across including the leaves, proliferous from the base.

Leaves spirally trifarious, imbricated, spreading, 42 mm. long, $18\frac{1}{2}$ mm. broad below the middle, $5\frac{1}{2}$ mm. thick, the sheathing leaf base 6 mm. long on opposite side to the lamina, ovate-elliptic, acute-acuminate, cuspidate, long recurved; *face* concave, recurved towards the tip at an angle of about 80 degrees, minutely scabrous and sandy in the upper $\frac{1}{3}$, with about 6 lines, pink near base, dark green above becoming reddish towards the tip; *back* rounded, triangular towards the tip, minutely scabrous and sandy in the upper $\frac{2}{3}$, with about 14 lines, pink near base, dark green above becoming reddish-brown near tip; *keel* 1, in the upper $\frac{1}{2}$, central, obtuse below, acute and conspicuously raised towards the tip; *margins* acute in the lower $\frac{1}{3}$, blunt above, reddish-brown.

KEY TO THE DRAWINGS.

F=Leaf face.
LS=Longitudinal section.
SB=Section near base.
INF=Inflorescence.
O & S=Ovary and Stamens.
C=Capsule.

B=Leaf back.
SM=Section near middle.
ST=Section near tip.
Del. M. C. L.=Drawn by Miss M.
Courtenay-Latimer,

Peduncle simple, terete, barely 1 mm. diam., 27 cm. long including the raceme, dark reddish-brown below; *raceme* 9—10 cm. long, with about 14 spirally arranged flowers and buds, 1—2 open simultaneously; *pedicels* $4\frac{1}{2}$ —5 mm. long, $\frac{1}{2}$ mm. diam., ascending, light brown; *sterile bracts* 3, $5\frac{1}{2}$ mm. long, the lowest 6 cm. from base of peduncle; *fertile bracts* $2\frac{1}{2}$ mm. long, deltoid, acuminate-subulate, light brown with a fine dark brown nerve; *perianth* dull white, 15—16 mm. long, the cylindrical-hexagonal sub-globose base 3 mm. diam., only slightly constricted above, tapering to pedicel, oblong, $\pm$ ascending, hardly curved; *upper segments* obtuse, channelled, the inner recurved about 50 degrees, face colour white with a broad green nerve, the 2 outer recurved about 90 degrees, $\pm$ spreading, face colour white with a fine brown nerve; *lower segments* obtuse, the inner $\pm$ channelled, very recurved, face colour white with a medium fine brown nerve, the 2 outer replicate below, channelled above, very recurved, shorter than the inner, spreading, face colour white with a fine greenish-brown nerve; *stamens* $5\frac{1}{2}$ and 6 mm. long; *ovary* $2\frac{1}{2}$ mm. long, barely $1\frac{1}{4}$ mm. diam., dull green; *style* $1\frac{1}{2}$ mm. long, yellowish-green, straight, $\pm$ capitate.

Habitat: Cape Province: Humansdorp District (Type, G. G. Smith 3189, in East London Museum Herb.; co-types in Nat. Bot. Gdns. Herb., Kirstenbosch; Nat. Herb., Pretoria).

Distribution: not further known.

This interesting species was collected by Miss M. Courtenay-Latimer in March, 1940, on the farm Ferndale, about 6 miles N.E. of Patentie, on rocky slopes facing north. The locality was pointed out by the owner of the farm, Mr. Guy Bean, who remembered seeing the plants growing many years ago, before he lost his sight, and for whom the plant is named. It is, like *H. cordifolia* Haw., the largest of all the known species and varieties in the Sect. Trifariae. It is, however, easily distinguished from *H. cordifolia* by its longer and spirally arranged leaves.

Haworthia Beanii var., minor G. G. Smith. (Liliaceae-Aloineae.) Sect. Trifariae.

Caulis foliatus sub-erectus, longus usque ad 8 cm., latus una cum foliis 42 mm.

Folia tortuose trifaria, longa 22 mm., lata 14 mm., crassa 4 mm.; *supra* concava, minute scabrosa; *subtus* convexa, minute scabrosa.

Pedunculus simplex, diam. $\frac{1}{2}$ mm., longus $25\frac{1}{2}$ cm. una cum racemo longo 7 cm.; *pedicelli* longi 7 mm., diam. $\frac{1}{2}$ mm.; *bracteae steriles* 2, longae 4 mm.; *bracteae fertiles* longae $3\frac{1}{2}$ mm.; *perianthium* album, longum 18 mm.; *stamina* longa 5—6 mm.; *ovarium* longum 3 mm., diam. $1\frac{1}{4}$ mm.; *stylus* longus vix 2 mm.

Leafy stem sub-erect, up to 8 cm. long, 42 mm. across including the leaves, proliferous from the base and forming clusters.

Leaves spirally trifarious, imbricated, spreading, 22 mm. long, 14 mm. broad below middle, 4 mm. thick at middle, the sheathing leaf base 5—5½ mm. long on opposite side to the lamina, ovate, acute, cuspidate, recurved; face concave, concave-triangular towards the tip, minutely scabrous and sandy in the upper $\frac{2}{3}$, pink near base, the young leaves

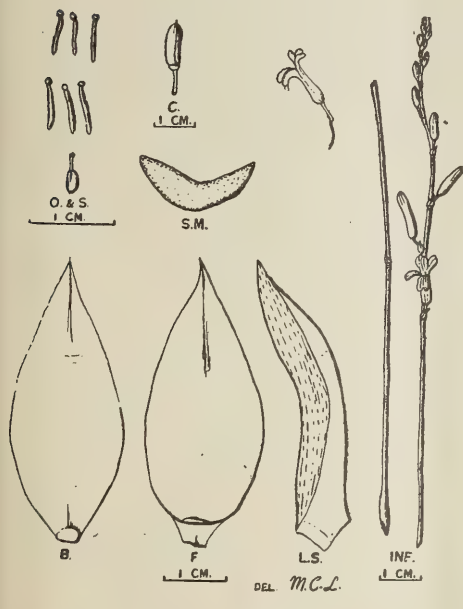


FIG. 1. *H. Beanii*.

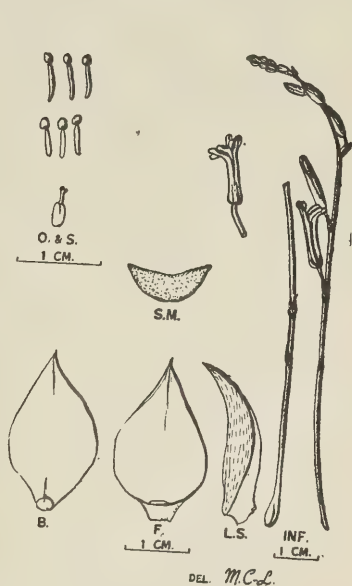


FIG. 2. *H. Beanii* var. *minor*.

light green to light-yellowish green, becoming dark green when old, dull; *back* convex, triangular towards the tip, minutely scabrous and sandy in the upper $\frac{2}{3}$, pink at base, dark green above, dull; *keel* 1, in upper $\frac{2}{3}$, gristly near tip, obliquely arranged; *margins* acute in the lower $\frac{1}{3}$, blunt above, scabrous, concolorous.

Peduncle simple, terete, $\frac{1}{2}$ mm. diam., 25½ cm. long including the raceme, brown below; *raceme* 7 cm. long, with about 10 spirally arranged flowers and buds, 1 open at a time; *pedicels* 7 mm. long, $\frac{1}{2}$ mm. diam., ascending, greenish-brown; *sterile bracts* 2, 4 mm. long, the lowest 6½ cm. from the base of peduncle; *fertile bracts* 3½ mm. long, deltoid,

acuminate, light brown with a very fine dark brown nerve; *perianth* white, 18 mm. long, the cylindrical-hexagonal base $3\frac{1}{4}$ mm. diam., constricted to $2\frac{3}{4}$ mm. above, not stipitate, oblong, erect-spreading, $\pm$ curved; *upper segments* obtuse, channelled, the inner one straight, face colour white at tip, bright green below, with a medium-fine greenish-brown nerve, the 2 outer segments long $\pm$ recurved, spreading, face colour white with a broad nerve which is brown near the tip and greenish below; *lower segments* obtuse, the inner one channelled, recurved at an angle of about 90 degrees, face colour white with a medium-fine nerve which is brown at the tip and greenish below, the 2 outer segments replicate, slightly less recurved than the inner, spreading, face colour pure white at tip, bright green below with a medium-fine nerve which is brown at tip and greenish-brown below; *stamens* 5 and 6 mm. long; *ovary* 3 mm. long, $1\frac{1}{4}$ mm. diam., light green; *style* barely 2 mm. long, green, $\pm$ bent, $\pm$ capitate.

Habitat: Cape Province; Humansdorp Dist. (Type, G. G. Smith 3678, in East London Museum Herb.; co-types in Nat. Bot. Gdns. Herb., Kirstenbosch and Nat. Herb., Pretoria).

Distribution: not further known.

This variety was collected by Miss M. Courtenay-Latimer on the farm Ferndale, near Patentie, in the Humansdorp Dist., in Oct., 1940, growing on a very rocky hill about 2 miles N.W. of the locality for *H. Beanii* Smith. Compared with the species the leaves are much smaller and more loosely arranged, the plant is more proliferous, and the pedicels are longer.

Haworthia Dekenahii, G. G. Smith. (Liliaceae-Aloineae.) Sect. Retusae.

Rosetta acaulescens, diam. 80 mm.

Folia circiter 15, longa 48 mm., lata 20—23 mm., acuta, breviter mucronata; *supra sub parte retusa* plano-concava, laevia; *pars retusa* deltoideo-acuta, longa 28 mm., lata 23 mm., tuberculis parvis orbiculatis prominentibus concoloribus lineisque usque 10 male definitis albido-viridibus ornata; *subtus* convexa, apicem versus $\pm$ triquetra, laevia; *carina marginesque* paucis dentibus tubercularis ornati.

Pedunculus simplex, diam. $2\frac{1}{4}$ mm., longitudine 15 cm. una cum racemo longo $10\frac{1}{2}$ cm.; *pedicelli* longi $1\frac{1}{4}$ mm., obscure virides; *ovarium* longum $3\frac{1}{2}$ mm., diam. $1\frac{3}{4}$ mm.; *stylus* longus 1 mm.

Rosette acaulescent, 80 mm. diam.

Leaves about 15, the young erect, the old spreading, recurved, firm, 48 mm. long, 20—23 mm. broad and 14 mm. thick at base of end-area,

acute, not awned, shortly mucronate; *face below end-area* flat-concave, smooth, light green becoming darker above; *end-area* deltoid-acute, 28 mm. long, 23 mm. broad, the old leaves retused at an angle of about 90 degrees, the young less retused, pellucid green, slightly convex, with small round raised concolorous tubercles and many longitudinal white flecks between the lines, the flecks becoming less numerous on old leaves, up to 10 smudgy greenish-white lines of which 1—2 nearly reach the tip, the others progressively shorter with about 3 just showing in the pellucid part between the long lines, the lines parallel-converging but not meeting; *back* convex, $\pm$ triangular near tip, smooth, light green in the lower half, dark brownish green above, dull, with about 12 indistinct lines; *keel* 1, near tip, $\pm$ obliquely arranged, with a few tubercle-like concolorous teeth above; *margins* acute, with a few tubercle-like concolorous teeth in retused part.

Peduncle simple, terete, $2\frac{1}{4}$ mm. diam., 15 cm. long including the dense raceme, brown towards the lower end; *raceme* up to $10\frac{1}{2}$ cm. long, about 24 spirally arranged flowers and buds, 1(—2) open simultaneously; *pedicels* $1\frac{1}{4}$ mm. long, 1 by $1\frac{3}{4}$ mm. elliptic, dark green; *sterile bracts* about 17, 11 mm. long, the lowest $1\frac{1}{2}$ cm. from base of peduncle; *fertile bracts* 8 mm. long, deltoid, acuminate, brownish-white with a broad dark brown nerve; *perianth* brownish-white, the cylindrical-triangular base $4\frac{1}{2}$ mm. across, constricted to $2\frac{3}{4}$ mm. above, ascending, curved; *upper segments* obtuse, channelled, recurved about 90 degrees, face colour of the 2 outer white with a medium-fine dark brown nerve, replicate near tip, $\pm$ spreading, face colour of inner one white above, light green below, with a broad dark green nerve, shorter; *lower segments* obtuse, channelled, very recurved, face colour of the 2 outer white above, green below with a medium-fine dark green nerve, replicate near tip and spreading, face colour of inner one white with a medium-fine brown nerve, longer; *stamens* 5 and 6 mm. long; *ovary* $3\frac{1}{2}$ mm. long, $1\frac{3}{4}$ mm. diam., dull greenish-brown; *style* 1 mm. long, white, bent, $\pm$ capitate; *capsule* 13 mm. long, $3\frac{3}{4}$ mm. diam., brownish-green.

Habitat: Cape Province; Riversdale Dist. (Type *G. G. Smith*, 5489, (*Dekenah* 86) in East London Museum Herb.; co-types in Nat. Bot. Gdns. Herb., Kirstenbosch and Nat. Herb., Pretoria.

This attractive species is named for its discoverer, Mr. J. Dekenah of Riversdale, who collected it near Albertinia in the Riversdale Dist., and sent it to the author in Dec., 1942. The plant grows in rock crevices with very little soil. The most striking character and one by which this species is recognised is the longitudinally silvery-white flecked end-area and by the lines made more distinct by the bordering flecks, giving

the smudgy appearance, also the very heavy and long bracts which near the apex of the raceme extend beyond the buds. Compared with *H. retusa* (L.) Haw. the leaves have no end-awn, and the backs are dark brownish green.

Haworthia Reinwardtii, v. **olivacea** G. G. Smith. (Liliaceae-Aloineae.)

Sect. Coarctatae.

Caulis foliatus, altus circiter 8 cm., diam. una cum foliis 40 mm.

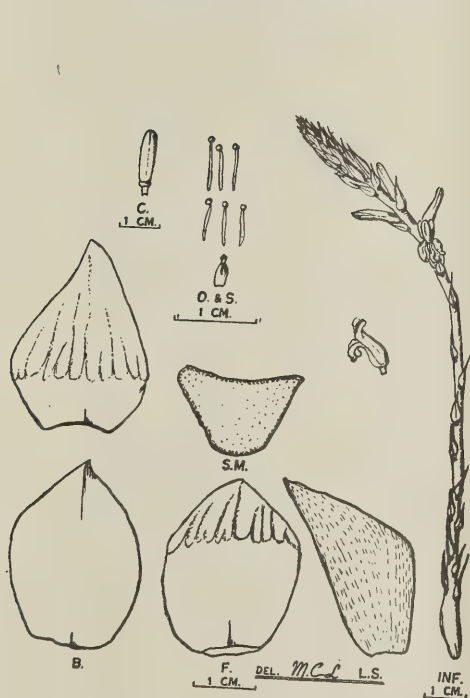


FIG. 3. *H. Dekenahii*.

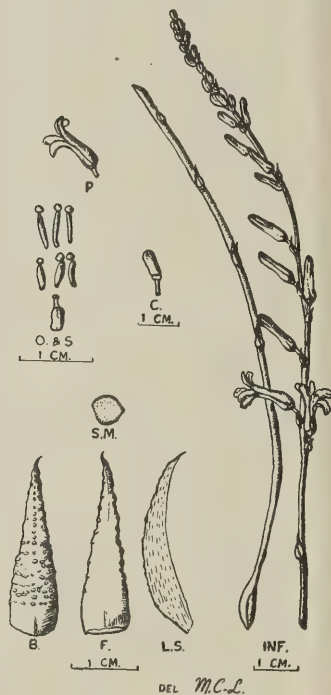


FIG. 4. *H. Reinwardtii* var. *olivacea*.

Folia crebra, ascenduntia, incurvata, longa 33 mm., basi lata 9 mm., lanceolata, acuminata, cuspidata; *supra* plana vel concava, pallide viridia; *subtus* convexa, tuberculis albido-viridibus vel apicem versus plus minusve concoloribus, prominentibus, orbiculatis vel transversaliter oblongatis in lineas 9—11 transversales instructis percursa, olivaceo-viridia, apicem versus pallidiora, nitentia, vetera apicem prope rubida.

Pedunculus simplex, diam. $1\frac{1}{2}$ mm.; *racemus* longus 7 cm.; *pedicelli* longi $2\frac{1}{2}$ mm., diam. 1 mm.; *bractae steriles* 4, longae $4\frac{1}{2}$ mm.; *bractae fertiles* longae 2 mm.; *perianthium* album, longum 14 mm.

Leafy stem sub-erect, about 8 cm. tall, 40 mm. diam. including the leaves, slowly proliferous from the base and forming clusters.

Leaves crowded, multifarious, ascending, incurved, firm, 33 mm. long, 9 mm. broad at the base, up to 5 mm. thick above the base, lanceolate, acuminate, cuspidate; *face* flat to concave, smooth, light green; *back* rounded, beset with 9—11 transverse rows of raised, round and transversely oblong greenish-white, $\pm$ concolorous in young leaves, $\frac{1}{2}$ — $\frac{3}{4}$ mm. diam. tubercles, also arranged in 8—10 longitudinal rows, the transverse rows $2\frac{1}{4}$ mm. apart at the middle of the leaf, olive green, lighter towards the tip, shining, the older leaves becoming reddish near tip.

Peduncle simple, terete, fully $1\frac{1}{2}$ mm. diam. near the base, including the raceme 18 cm. long, light brownish-green; *raceme* 7 cm. long, 12—25 spirally arranged flowers and buds, 2 open simultaneously; *pedicels* $2\frac{1}{2}$ mm. long, 1 mm. diam., reddish-brown; *sterile bracts* 4, $4\frac{1}{2}$ mm. long, the lowest 5 cm. from base of peduncle; *fertile bracts* 2 mm. long, deltoid, acuminate, white with a fine red nerve; *perianth* white, 14 mm. long, the cylindrical-hexagonal sub-globose base $3\frac{1}{2}$ mm. diam., tapering to the pedicel, only slightly constricted above, oblong, erect, the tube curved; *upper segments* obtuse, channelled, recurved, face colour of inner one white with a broad light brown nerve, face colour of outer ones pinkish with a broad brown nerve; *lower segments* narrow obtuse, recurved about 90 degrees, the inner one channelled, the face colour white with a broad brown nerve, the 2 outer segments replicate, spreading, the face colour pink with a broad brown nerve; *stamens* $4\frac{1}{2}$ and 5 mm. long; *ovary* 3 mm. long, $1\frac{3}{4}$ mm. diam., yellowish-green; *style* $1\frac{3}{4}$ mm. long, bent, capitate.

Habitat: Cape Province; Kaffir Drift in Peddie District. (Type, G. G. Smith 5260, in East London Museum Herbarium; co-types in Nat. Bot. Gdns. Herb., Kirstenbosch; Nat. Herb., Pretoria.)

Distribution: Not further known.

Though many shades of olive green are noticeable in the varieties of *H. Reinwardtii*, the distinctiveness of the colour is usually detracted from by the whiteness of the tubercles. In *H. Reinwardtii* v. *olivacea* the tubercles are greenish-white to concolorous and the olive green colour stands out distinctly. It is nearest to *H. Reinwardtii* v. *fallax* v. P., which plant however often has confluent tubercles on the back of leaves, the leaves are not as spreading and are not as acuminate, and the perianth and fertile bracts are longer.

This distinctive plant was collected by the author in Feb., 1942, near Kaffir Drift in the Peddie Dist. in a rather inaccessible spot.



PLATE IV.

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| 1. <i>H. Bearii</i> . | 2. <i>H. Reinwardtii</i> var. <i>olivacea</i> . |
| 3. <i>H. Bearii</i> var. <i>minor</i> . | 4. <i>H. Dekenahii</i> . |